Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A plug-in furnace ~~&~~ and kiln-oriented video camera, comprising:

a body of a video camera, a video recorder (23) and a digital thermometer (25);

wherein the body of a video camera ~~comprising~~ comprises a video camera (19), a pick-up gun (16), a pipe-typed cooler (9), a sealing device (15), a sight hole (21), a blow-down ring (22), and a temperature measurement element (20);

wherein the video camera (19) is installed at a front end of pick-up gun (16), inserted into the furnace through the pipe-typed cooler (9) installed at the flange short pipe (4) of a furnace shell;

wherein the temperature measurement element is located near the top of video camera (19) in pick-up (16);

a ring gap 28 of ~~blow-down~~ video camera (19) is formed between blow-down ring (22) and video camera (19);

a double sealing structure of valve (13) and sealing sheath (15) ~~is used~~;

wherein video camera (19) ~~uses~~ comprises a lens of wide angle, with an angle of view ~~at~~ in the range of 90-120°;

a double gas protection for blow-down wind through the ring gap via an inner wind from sight hole (21) and an outside blow-down from sight hole (21) ~~is employed~~;

a video recorder (23), monitor (24) and digital thermometer (25) are placed outside the furnace shell, connected ~~respectively~~ through a cable line to the video camera (19) and the temperature measurement element (20).

2. (Currently Amended) The plug-in furnace ~~&~~ and kiln-oriented video camera ~~as claimed in~~ of claim 1, wherein the ~~said industrial~~ furnace ~~&~~ and kiln ~~is~~ comprises a blast furnace of iron-smelting (1);

wherein the ~~said~~ video camera (19) is a micro video camera;

wherein the ~~said~~ pipe-typed cooler (9) has a diameter ranging up to 60-200 mm and a length ranging up to 200-3000 mm;

wherein the ~~said~~ sight-hole (21) has an aperture up to Φ3- Φ15 mm; and

wherein the width of the gap of the ~~said~~ blow-down gap (28) is 0.2-3.0 mm.

3. (Currently Amended) The plug-in furnace & and kiln-oriented video camera ~~as claimed in~~ of claim 2, wherein the ~~said~~ micro video camera uses ~~the~~ CCD with a wide range of light sensing.

4. (Currently Amended) An image processing system, comprising ~~the following devices~~:

~~A~~ a body of a video camera, ~~using the bodyof video camera mentioned in claim 2 and claim 3 of the invention it~~, which receives ~~the~~ infrared light emitted from a furnace charge and ~~it~~ the light is transformed into ~~the~~ an infrared image of ~~the~~ a burden and ~~the~~ an adjacent equipment in ~~the~~ a furnace, when the furnace operates without visible light;

~~A~~ a computer~~,~~ for making an image process for the image, and ~~getting~~ obtaining the quantitative data of gas distribution and temperature distribution of the burden; and

~~A~~ a color monitor, in accordance with ~~the~~ a relative relation between the strength of infrared light and the temperature of ~~the~~ a measured object, to transform ~~the~~ gray values of various points in the image into temperature value, and to be displayed in the distribution status of temperature or gas for the burden in the forms of a STN color diagram, a numerical diagram and a curve diagram.

5. (New) The image processing system camera of claim 4,

wherein the video camera (19) is a micro video camera;

wherein the video camera comprises:

a pipe-typed cooler (9) having a diameter ranging up to 60-200 mm and a length ranging up to 200-3000 mm;

a sight-hole (21) having an aperture up to Φ3- Φ15 mm;

a blow-down ring (22), wherein a ring gap (28) is formed between blow-down ring (22) and video camera (19); and

wherein the width of the gap of the blow-down gap (28) is 0.2-3.0 mm.

6. (New) The image processing system of claim 1, wherein the micro video camera uses CCD with a wide range of light sensing.